

# Reinhold's Red Skull

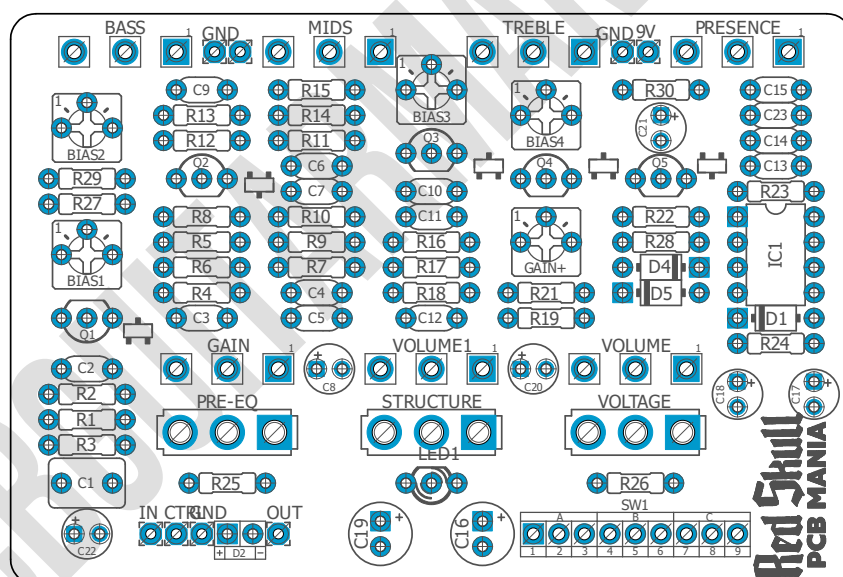
**Based on:**  
Bogner Ecstasy  
Red – 7th heaven  
**Effect type:**  
High gain preamp  
**Build difficult:**  
High

**Amount of parts:**  
High, total 82 components  
**Technology:**  
JFET + Charge pump  
**Power consumption:**  
9V

**Enclosure type:**  
1590bb  
**Get your board at:**  
[Reinhold's Red Skull](#)  
**Get your kit at:**  
[Das Musikding \(Europe\)](#)

## Project overview:

High gain JFET amp in a box. This circuit recreates the tone of Bogner Ecstasy's Red channel tube amp incorporating many elements of GoosoniqueWorx Seventhaven. The Bogner Red channel pedal does not directly inspire this project, but we can assure you it will melt your face off.



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## Introduction

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If you have been following PCB Mania for a while, you know we love Amp in box pedals, whether based on big brand models, like the Freeman or Benzin VH4, or DIY versions of classic tube amps like The Wolfgang and the JCM800. For this case, we have something Hybrid in between both worlds. This DIY circuit mixes elements from a direct JFET conversion of a tube amp with features from the original Bogner Red pedal and GoosoniqueWorx Seventheaven. We also included a dual-channel option with independent volume knobs and different gain structures.

This pedal features an internal charge pump that allows you to change your voltage input from 9v to 18v just with the flick of a switch. Just bear in mind to dial the proper biasing that works the best in both conditions or try your favorite settings and let them fixed.

The EQ section recreates the passive tone stack of a tube amplifier, while the PRE-EQ toggle enables capacitors after the first gain stage to thicken your sound from the beginning of the signal.

Structure toggle changes the gain's dynamics; however, it could get a bit too nasty under certain bias conditions.

One thing is for sure about this model, if you like High gain, chugga chugga, and preamp in a box, you will love the Red Skull!

Remember, this project uses JFET, which requires proper biasing through their respective trimpots.

This board allows you to use either SMD or standard through-hole JFET.

## Controls

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- BASS
- GAIN
- MIDS
- PRESENCE
- TREBLE
- VOLUME
- VOLUME 1

# Bill of materials

Resistors	
Part	Value
R1	1M
R2	68K
R3	820R
R4	470K
R5	100K
R6	470K
R7	30K
R8	4K7
R9	4K7
R10	470K
R11	30K
R12	470K
R13	30K
R14	470K
R15	30K
R16	10K
R17	470K
R18	30K
R19	470K
R21	1K
R22	10K
R23	33K
R24	100R
R25	4K7
R26	4K7
R27	100R
R28	100K
R29	100R
R30	100R

Capacitors	
Part	Value
C1	680n
C2	4n7
C3	1n
C4	470p

C5	4n7
C6	1n
C7	2n2
C9	470p
C10	470p
C11	22n
C12	470p
C13	470p
C14	22n
C15	3n3
C23	22n

Electrolytic Capacitors	
Part	Value
C8	2.2u
C16	220u
C17	1u
C18	10u
C19	100u
C20	10u
C21	220u
C22	10u

Potentiometers	
Part	Value
BASS	A1M
GAIN	B500K
MIDS	B25K
PRESENCE	B20K
TREBLE	B250K
VOLUME	A1M
VOLUME1	A1M

Trim pots	
Part	Value
BIAS1	100K

BIAS2	100K
BIAS3	100K
BIAS4	100K
GAIN+	50K

IC	
Part	Value
IC1	TC1044\$CPA

Transistors	
Part	Value
Q1	J201
Q2	J201
Q3	J201
Q4	J201
Q5	J201

Switches	
Part	Value
SW1	3PDT Footswitches
Pre-eq	SPDT ON-OFF-ON
Structure	SPDT ON-ON
Voltage	SPDT ON-ON

Diodes	
Part	Value
D1	1N5817
D2	3mm red LED
D4	1N5817
D5	1N5817
LED1	LED Dual Common Cathode

# Shopping list

Resistors		
Qty	Value	Parts
2	100K	R5, R28
4	100R	R24, R27, R29, R30
2	10K	R16, R22
1	1K	R21
1	1M	R1
5	30K	R7, R11, R13, R15, R18
1	33K	R23
7	470K	R4, R6, R10, R12, R14, R17, R19
4	4K7	R8, R9, R25, R26
1	68K	R2
1	820R	R3

Capacitors		
Qty	Value	Parts
2	1n	C3, C6
3	22n	C11, C14, C23
1	2n2	C7
1	3n3	C15
5	470p	C4, C9, C10, C12, C13
2	4n7	C2, C5
1	680n	C1

Electrolytic Capacitors		
Qty	Value	Parts
1	100u	C19
3	10u	C18, C20, C22
1	1u	C17
1	2.2u	C8
1	220u	C21
1	220u	C16

Potentiometers		
Qty	Value	Parts
3	A1M	BASS, VOLUME, VOLUME1
1	B20K	PRESENCE
1	B250K	TREBLE
1	B25K	MIDS
1	B500K	GAIN

Trim pots		
Qty	Value	Parts
4	100K	BIAS1, BIAS2, BIAS3, BIAS4
1	50K	GAIN+

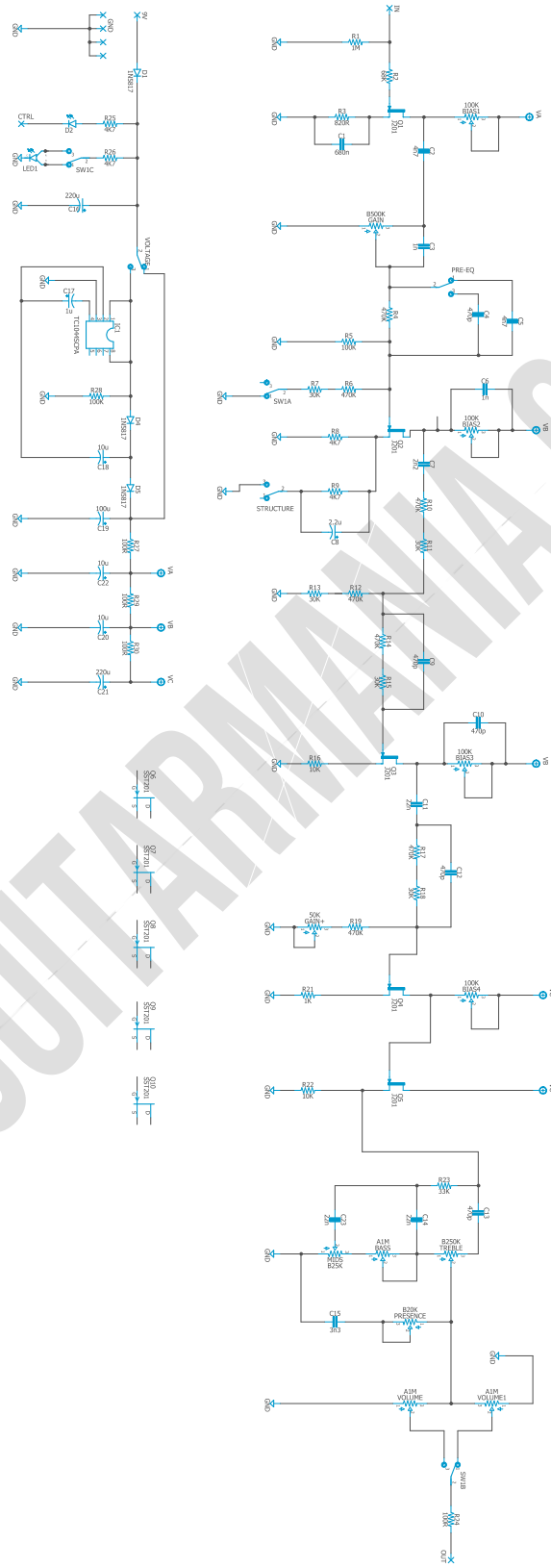
IC		
Qty	Value	Parts
1	TC1044SCPA	IC1

Transistors		
Qty	Value	Parts
5	J201	Q1, Q2, Q3, Q4, Q5
1	On-off-on	PRE-EQ

Switches		
Qty	Value	Parts
1	3PDT Footswitch	SW1
1	SPDT ON-OFF-ON	Pre-EQ
2	SPDT ON-ON	Structure, Voltage

Diodes		
Qty	Value	Parts
3	1N5817	D1, D4, D5
1	LED Dual Common Cathode	LED1
1	3mm red LED	D2

# Schematic



# Components Recommendations

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As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

## Build Notes

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If this is one of your first projects, I recommend you to take a look at our [Pedal Building Guide](#).

For a successful and tidy build, it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

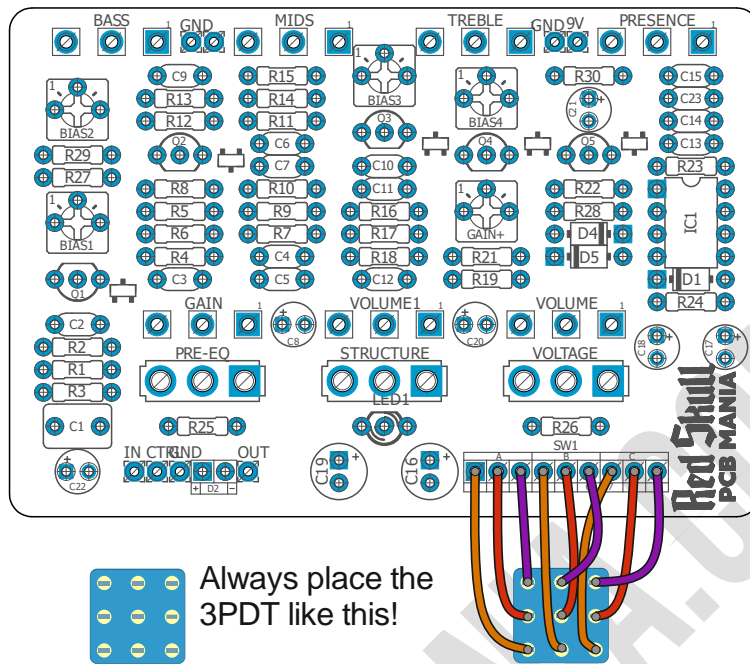
## Wiring Diagram

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All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named "Ctrl" or "LED" is the one that controls the status of the led; wire it to the "LED" pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it [here](#) to access our [Pedal Wiring Guide](#).



## Drill Template

This Project has been planned to fit into a 1590bb enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print on an A4 page.

## Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our [PCB Guitar Mania – Builders Group](#) on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

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